



Point Forecast Matrices



User's Guide to Decoding the PFM

What are the Point Forecast Matrices?

The Point Forecast Matrices (PFM) is a table that displays the forecasted weather parameters in 3, 6 and 12 hour intervals out to 7 days in the future. Below is a sample PFM, along with a description of each parameter's code (*blue colored numbers*).

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(1) FOUS56 KPQR 191326
    PFMPQR
(2) POINT FORECAST MATRICES
    NATIONAL WEATHER SERVICE PORTLAND, OR
    526 AM PST TUE DEC 9 2003

(3) PORTLAND-100426-
    45.59N 122.60W
    526 AM PST TUE DEC 9 2003

(4) DATE          TUE 12/09/03      WED 12/10/03      THU 12/11/03
    UTC 3HRLY     11 14 17 20 23 02 05 08 11 14 17 20 23 02 05 08 11 14 17 20 23 02
    PST 3HRLY     03 06 09 12 15 18 21 00 03 06 09 12 15 18 21 00 03 06 09 12 15 18
(5) MAX/MIN              46              38              46              39              46
(6) TEMP                37 39 44 46 42 40 39 39 38 39 44 46 43 41 40 40 39 40 45 46 43
(7) DEWPT               37 37 30 31 41 40 35 37 38 39 40 41 40 40 34 36 38 39 42 42 41
(8) RH                  100 92 57 55 96100 85 92100100 86 83 89 96 79 85 96 96 89 86 93
(9) WIND DIR            E E E E E E E E E E E E E NE NE NE NE E E E E E
(10) WIND SPD           13 13 11 11 8 8 11 11 4 4 6 6 12 12 12 12 13 13 13 13 13
(11) CLOUDS             BK BK OV OV OV OV BK BK BK BK BK BK BK BK SC SC FW CL CL CL
(12) POP 12HR              60              70              60              50              40
(13) QPF 12HR              0.03              0.21              0.04              0.03              0.02
(14) SNOW 12HR            00-00              00-00              00-00              00-00              00-00
(15) RAIN SHWRS
    RAIN              C C C L L L L L L L L L L C C C C C C C
(16) OBVIS              F F PF              F PF              F F
(17) WIND CHILL         36 29 27 31 36 38 36 31 25 23 22 34
(18) MIN CHILL          37 36 27 27 36 25 22 24

(19) DATE          FRI 09/19/03      SAT 09/20/03      SUN 09/21/03      MON 09/22/03
    UTC 6HRLY     08 14 20 02 08 14 20 02 08 14 20 02 08 14 20 02
    PST 6HRLY     00 06 12 18 00 06 12 18 00 06 12 18 00 06 12 18
    MIN/MAX       39 47 41 47 42 49 41 49
    TEMP          40 39 45 44 42 41 46 45 43 42 48 45 42 41 47 46
    DEWPT         33 39 42 40 36 32 35 39 39 40 42 42 42 40 39 38
(20) PWIND DIR     E E S E S E SW SW
(21) WIND CHAR     GN BZ GN WY GN BZ BZ BZ
(22) AVG CLOUDS   SC SC BK BK BK BK BK BK OV OV OV OV BK BK BK BK
    POP 12HR       10 60 40 40 50 50 40 40
    RAIN SHWRS
    RAIN              L L C C C C C C C C C C C

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Key to Decoding the PFM:

- (1) WMO Identification Code, gives the issuing office identifier and the issuance date/time in UTC.
- (2) Product name, issuing office information, and issuance date/time in local time.
- (3) **Point location** for which this PFM has been issued, and the date/UTC time the forecast expires.
- (4) **Forecast Date and Time groups.** Forecast times/dates listed, both in UTC and local time in 3 hour increments.
- (5) **MAX/MIN Temperatures.** In afternoon issuances, will be labeled MIN/MAX. Forecast of maximum and minimum temperatures in degrees F. This is forecast out 7 days. Will be an integer (31 or -5).
- (6) **TEMP** is the expected temperature (deg F) valid at the indicated hour. TEMP is forecast at 3-hour intervals out to 60 hours, then at 6-hour intervals on to day 7.
- (7) **DEWPT** is the expected dew point temperature (deg F) for the same time periods corresponding to TEMP.
- (8) **RH** is the relative humidity for the same time period as its corresponding TEMP and DEWPT. It is available out to 60 hours.
- (9) **WIND DIR** is the forecast wind direction (*from which the wind blows*) at the indicated hour, using the 8 compass points (N, NE, E, SE, S, SW, W, NW). Calm wind will be listed as zeroes (00) in place of a direction. Available in 3-hour intervals out to 60 hours.
- (10) **WIND SPD** and **WIND GUST** are the forecast wind speeds in miles per hour (mph) as the indicated hour. If calm winds forecast, then zeroes (00) will be listed in place of a speed. Wind Speed is available in 3-hour intervals out 60 hours. A wind gust row will appear in the whenever the forecasted wind gusts exceed the sustained wind speed (WIND SPD) by at least 10 mph.
- (11) **CLOUDS.** This is the sky coverage during the indicated hour. Clouds are available in 3-hour intervals out 60 hours. Clouds are divided into 5 categories:

PFM Cloud Code	Commonly Called	% Sky Covered by clouds
CL	Clear or Sunny	0% to 6% cloud cover
FW	Mostly Clear or Mostly Sunny	7% to 31%
SC	Partly Cloudy or Partly Sunny	32% to 69%
BK	Mostly Cloudy	70% to 94%
OV	Cloudy	95% to 100%

- (12) **POP 12HR** is the probability of precipitation, and is defined as the likelihood (in percent) of a measurable precipitation event (*0.01 inch or more*) at the given point. The 12HR refers to the 12 hour valid time ending at indicated hour.
- (13) **QPF 12HR** is the total amount of liquid precipitation (*in inches*) expected during the 12 hour period ending at the indicated hour.
- (14) **SNOW 12HR** is the expected range of total snowfall accumulations (*in whole inches*) forecast to occur during the 12 hour period ending at the indicated hour. This parameter will only appear during the wintertime, as determined by the local NWS office. This parameter includes 1 to 5 characters which are right justified in the column below the hour defining the ending time of the precipitation period. SNOW 12HR may appear as a one or two digit number (ex: 1, 7 or 13), or as a specified range (1-2, 4-6, 8-12). When no snowfall is forecast, double zeroes will appear (00-00). Snowfall that is not measurable (less than 0.1 inch) is referred to as a Trace, and depicted as a T. SNOW 12HR is forecast out 36 hours.

- (15) **PRECIPITATION TYPE** and **CATEGORY**. The PFM may list several types of precipitation. Precipitation types only appear in the PFM if they are forecast to occur at the given point.

Types of Precipitation that may be listed:

RAIN	TSTMS (<i>thunderstorms</i>)
SPRINKLES	DRIZZLE
RAIN SHWRS (<i>rain showers</i>)	SLEET
SNOW	FRZNG RAIN (<i>freezing rain</i>)
SNOW SHWRS (<i>snow showers</i>)	FRZNG DRZL (<i>freezing drizzle</i>)
FLURRIES (<i>snow flurries</i>)	

For each Type listed, a Category percentage of occurrence will be listed under the indicated hour. This gives an indication of the likelihood of the precipitation's type's occurrence.

PFM Type Code	Common Descriptor	Probability of Precipitation
S	Slight Chance	20%
C	Chance	30% 50%
L	Likely	60% to 70%
O	Occasional or Periods of	80% to 100%
D	none used	80% to 100%

When Showers and/or Thunderstorms are forecast, the following Category POP may be used:

PFM Type Code	Common Descriptor	Probability of Precipitation
IS	Isolated	20% or less
SC	Scattered	30% to 50%
NM	Numerous	60% to 70%
EX	no descriptor used	80% to 100%

- (16) **OBVIS** If an obstruction to visibility is forecast, a row label OBVIS will be listed beneath any forecasts of precipitation. If no precipitation is forecast, then the OBVIS row will be listed beneath CLOUDS. OBVIS is forecast at 3-hour intervals through 60 hours. Following are some obstructions:

OBVIS Code	Common Name	OBVIS Code	Common Name
F	Fog	BS	Blowing Snow
F+	Dense Fog	BL	Blowing Dust
PF+	Patchy Dense Fog	K	Smoke
H	Haze	VA	Volcanic Ash

- (17) **WIND CHILL** is a seasonally based parameter, as determined by the NWS office.
- (18) **MIN CHILL 6HR**. When the WIND CHILL is included, this line will appear, which is the minimum wind chill in the period ending at the indicated hour.
- (19) **Forecast Date/Time**. This is the beginning of the extended forecasted period, from 60 hours out to day 7. The data is generally given in 6-hour increments.
- (20) **PWIND DIR** is the "predominant" wind direction during the 12 hour period ending at the indicated hour. PWIND DIR is only available in the extended section (*60 hrs to day 7*) of the PFM.

(21) WIND CHAR is a forecast of the characteristics of the wind for the 12 hour period ending at the indicated hour. WIND CHAR is comprised of ranges of wind speeds, used in conjunction with the deterministic wind speeds. Each range category has a descriptive wind term (such as breezy) to best describe the MAXIMUM sustained wind speed for that 12 hour period.

PFM WIND CHAR Code	Common Descriptor	Sustained Speed
LT	Light	less than 8 mph
GN	Gentle	8 - 14 mph
BZ	Breezy	15 - 20 mph
WY	Windy	21 - 30 mph
VW	Very Windy	31 - 39 mph
SD	Strong or Damaging	40 mph or more

(22) AVG CLOUDS. This is the average amount of all clouds during the 6 hour interval ending at the indicated hour. Clouds are divided into 5 categories:

PFM Cloud Code	Commonly Called	% Sky Covered by clouds
CL	Clear or Sunny	0% to 6% cloud cover
FW	Mostly Clear or Mostly Sunny	7% to 31%
SC	Partly Cloudy or Partly Sunny	32% to 69%
BK	Mostly Cloudy	70% to 94%
OV	Cloudy	95% to 100%

This guide by:
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